



IEEE CINCINNATI SECTION NEWSLETTER – NOV/DEC 2009

DECEMBER SECTION MEETING

A Grand Night Out

DATE: Thursday, December 3, 2009
PLACE : Raffel's – 10160 Reading Road (see below for directions)
TIME : 5:30 p.m. - Doors Open
6:00 p.m. - Dinner
COST FOR DINNER: \$15.00 per person – **MEMBERS AND THEIR ADULT GUESTS ONLY!**

MENU SELECTIONS: Roasted Turkey & Dressing, Baked Ham with Pineapples, Couscous Stuffed Green Peppers, Sweet Potato Casserole, Scalloped Potatoes, Season Green Beans, Cranberry Relish, Dinner Rolls and Butter, Assorted Holiday Pies, Coffee, Tea, Iced Tea, Soft Drinks. There is also a bar available for the purchase of alcoholic drinks.

LOCATION: Raffel's is located at 10160 Reading Road, south of Glendale-Milford Road on the east side of Reading. Take I-75 to the Glendale-Milford Rd. Exit, go east on Glendale-Milford Road approximately $\frac{3}{4}$ of a mile to Reading Rd. and turn right on Reading.

RESERVATIONS: Reservations are required - No walk-ins. Reservation deadline is Noon, December 1. Make your reservation by emailing our Arrangements Chair at Reservations@ieeeCincinnati.org, or leaving a voice mail at 513-629-9380. Include your **membership number (required)** and a daytime phone number with your reservation information.

ABOUT THE MEETING: Our Annual Holiday Dinner will be held on Thursday, December 3, at Raffel's in Evendale, Ohio. The evening is billed as "A Grand Night Out", and it is a perfect opportunity for you, your significant other, and your guests, to enjoy a wonderful evening of great food and entertainment, at the extremely low price of only \$15 per person. Doors open at 5:30, dinner starts at 6:00. While you are enjoying classic holiday fare and each others company, your feet will be tapping to the sounds of the outstanding Fitz's Jazz Quintet. As you make your way through the delicious selection of desserts, we offer the Amazing Cindini, who will astound you with table-side magic, followed by a stage-show of mind blowing effects.

MEMBERSHIP NEWS

NEW MEMBERS

The following individuals are IEEE members who are new to our Section:

Matthew Brennecke	Keith Nixon
Cody R. Davis	Yemi Oyediran
Dennis L. Doss	Suryanarayana V. Pendela
Steven C. Frigon	Joseph J. Praschak
Matt Fuller	Tim Joseph Receveur
Chittabrata Ghosh	Sorah Rhee

Brian L. Greskamp	Alton F. Sanders
Matthew Hagedon	Jennifer Smith
James J. Hayes	Evan Blyth Sneath
James J. Hayes	Camiren L. Stewart
Jonathan Hegman	Julee Uhrig
Shahram Jahanian	Nishanth Vepachedu
thomas laugle	Karl Wilbur
Lei Miao	Matt Winslow
Kevin Miller	Keith Nixon

We wish to welcome these new members to the Cincinnati Section!!!

Scanning the Past: A History of Electrical Engineering from the Past

Submitted by Bob Morrison, Editor

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Clarence W. Hansell and Philip S. Carter

Sixty years ago this month, the PROCEEDINGS OF THE INSTITUTE OF RADIO ENGINEERS (IRE) included a joint paper by Clarence W. Hansell and Philip S. Carter on the control of frequency of radio transmitters. At the time, both men worked as research and development engineers for the Radio Corporation of America (RCA) at its transmitter laboratory at Rocky Point on Long Island, NY. Both engineers made numerous contributions to communications engineering during their long careers at RCA and both became Fellows of the IRE.

Hansell was born in Indiana in 1898. He received a degree in electrical engineering from Purdue University in 1919. His first job was with the General Electric Company (GE) where he was assigned to help test and install long-wave radio transmitters using the Alexanderson 200 kW radio alternators. Subsequently, he collaborated with Walter R. G. Baker and William C. White on the development of a long-wave vacuum tube transmitter suitable for use in transoceanic radio telegraphy. Hansell joined the engineering staff of RCA in the early 1920's and helped develop shortwave radio equipment for commercial transoceanic service. He became director of the transmitter laboratory at Rocky Point in 1925 and continued to take an active role in research in radio communication and also experimental television, beginning in the 1930's. He contributed to radar development during World War II and served on a team of engineers sent to assess German innovations including magnetic tape recorders shortly after the war ended.

An article published in 1947 ranked Hansell among the all-time leaders in patented inventions with more than 240 US patents. He eventually received about 400 patents. Hansell retired from RCA in 1963 and died in 1967 at age 69.

Carter was born in Connecticut in 1896. He graduated with a degree in mechanical engineering from Stanford University in 1918. He served a few months in the Army Signal Corps before joining GE as an engineer in 1919. He soon transferred to RCA where he worked with Harold H. Beverage on development of long-wave receiving antennas. Later Carter spent time at various RCA transmitter stations in New Jersey and Massachusetts before being assigned to the transmitter laboratory at Rocky Point in 1926. He received his first patent in 1927 for inventing an improved method of coupling a transmitter to an antenna located some distance away. Other inventions followed including the folded dipole, the bow-tie antenna, and the biconical antenna. In

January 1939 Carter published an article on a universal transmission line chart in the RCA Review. The Carter chart enjoyed considerable use during World War II and later as an alternative to the Smith chart.

During the War, Carter helped establish a ground observer network to report sightings of German submarines along the East Coast. He also contributed to the design of antennas for use in electronics countermeasures and spent time in Europe in 1944 installing communications systems. He was active professionally in the IRE serving on the Board of Editors and several committees. He was Chairman of the professional group on Antennas and Propagation in 1953-1954. He died a few months before his planned retirement from RCA in 1961 at age 64.

*James E. Brittain
School of History , Technology and Society
Georgia Institute of Technology*

IEEE NEWS

IEEE-USA Helps Produce More Than Three-Dozen Local TV News Reports on IEEE Technologies That Benefit Society - From Creating a Voice-Command Robotic Helping Hand to Fighting Astronaut Bone Loss

WASHINGTON (6 October 2009) -- To increase the public's awareness and appreciation of the role of engineering in society, IEEE-USA has helped to produce more than three-dozen TV news reports on IEEE technologies this year. The segments were distributed to 140 U.S. TV stations and aired on stations with an estimated 122 million views.

The IEEE-USA-supported reports included: "Biomedical Engineers Creating Voice-Command Robotic Helping Hand for Patients in Need"; "Engineers Zero-In on Fighting Astronaut Bone Loss with Space Treadmill Simulator"; "Computer Scientists Make Still Photos in Existing Video Pixel Perfect with New Software"; and "Engineers Create Alternate Left Turns to Speed Up Intersections."

To view these IEEE-related technology stories, visit IEEE-USA's dedicated Web site at <http://www.aip.org/dbis/IEEE>. To see an example of how a local TV station broadcasts these reports, go to the story on "Doppler Radar Tracking Babies" at <http://aip.org/dbis/stories/2009/10089.html>.

Over the last five years, IEEE-USA has helped to underwrite some 700 local television news reports on engineering and science through the American Institute of Physics' "Discoveries & Breakthroughs" TV news service. IEEE-USA volunteer members collaborate with other technical professional society representatives in weekly telephone conferences to develop and vet story ideas, and to review scripts.

"Discoveries & Breakthroughs" is designed to provide accurate science, technology, engineering and mathematical news in an easily understood, visual format: to the millions who watch local TV news in the United States; to a growing international audience; and to Web news media syndicators. "Discoveries & Breakthroughs" stories are also being pitched to news editors in shrinking news operations -- focusing on newspapers and their Web sites, as well as wire services and other major Web news aggregators.

Academic research has documented that the public obtains most of its information about engineering and science from local TV news and that viewers of the "Discoveries & Breakthroughs" TV reports are more likely to support engineering and science than those who are not viewers.

The service delivers 12 vetted 90-second TV reports monthly, in English and Spanish, through its subscribing U.S. TV news stations -- with a confirmed minimum average of more than 47 million audience views per

month, according to Nielsen Media Research, SIGMA. Voice of America and the Middle East Broadcasting Center air the reports worldwide.

"Discoveries & Breakthroughs" is seeking new story ideas to include in its TV reports. IEEE student chapters are encouraged to submit stories about engineering breakthroughs themselves, or through their universities' public information officers, to Emilie Lorditch at elorditc@aip.org

Third Quarter Engineering Unemployment Data Show Mixed Trends

WASHINGTON (7 October 2009) -- The unemployment rate for U.S. electrical and electronics engineers (EEs), which had jumped to a record high in the second quarter, has eased, according to third quarter data just released by the Department of Labor's Bureau of Labor Statistics. For the engineering profession as a whole, the rate continued to climb, but more slowly.

The jobless rate for EEs dropped from 8.6 percent in the second quarter to 7.3 percent in the third. Quarter to quarter, the EE workforce grew by 26,000.

For civil engineers, the unemployment rate dropped from 4.7 percent to 3.6 percent, but for mechanical engineers, it rose from 5.6 percent to 9.5 percent. Overall, engineering joblessness rose to 5.9 percent, a 0.4 percentage point increase compared to a 1.6 percentage point increase in the second quarter.

The unemployment rate for computer professionals went from 5.4 percent in the second quarter to 6 percent in the third. Software engineers showed a slight decline (4.7 percent vs. 5 percent), while computer scientists and systems analysts experienced an increase (7.3 percent vs. 6.4 percent).

"These mixed data suggest that the worst may be passing, but we are still a long way from the levels of engineering unemployment we would expect to see in a strong economy," IEEE-USA President Gordon Day said. "We are also encouraged that announcements of layoffs in the high-tech sector appear to have subsided, after peaking early in the year. A clear turnaround in engineering unemployment would be a very positive sign for the general workforce, since engineers create new jobs in many categories."

Career enhancement resources are available for IEEE members at <http://www.ieeeusa.org/careers/>. Help for unemployed and at-risk members is available at <http://www.ieeeusa.org/careers/help/>.

IEEE-USA Releases Second E-Book in Innovation Series

WASHINGTON (16 October 2009) -- IEEE-USA has just released the second e-book in its new innovation series on "Doing Innovation: Creating Economic Value." Gerard H. (Gus) Gaynor, a retired 3M director of engineering, brings you "Book 2: Developing a Workable Innovation Process."

Gaynor writes that his new book "teaches the fundamentals related to the innovation process, presents various models with their limitations, describes the innovation design process, considers the issues in developing a process model, suggests a generic model and describes organizing for innovation."

Topics in the e-book include:

- Status of Innovation
- Innovation Process Models
- Summary of Process Models
- Working Toward an Innovation
- Innovating by Design

-- Generic Innovation Process Model

You can purchase your copy of "Doing Innovation: Creating Economic Value – Book 2: Developing a Workable Innovation Process" at www.ieeeusa.org/communications/ebooks for the IEEE member price: \$9.95. The nonmember price is \$19.95. IEEE members can purchase other IEEE-USA E-Books at deeply discounted member prices -- and download some free e-books.

To purchase IEEE members-only products and to receive the member discount on eligible products, members must log in with their IEEE Web account.

Former Presidential Science Adviser to Speak on Relationship between STEM R&D Funding and Job Growth, Innovation at IEEE-USA-Sponsored Event

WASHINGTON (20 October 2009) -- Dr. John Marburger, who served as science adviser to former President George W. Bush, will discuss the relationship between money spent on research and development in the STEM enterprise and job growth and innovation during his keynote address at George Washington University on Wednesday.

"We need to understand the relation between inputs like research funding, scholarships, tax incentives and training programs, and outputs like job creation, productivity and GDP growth," said Marburger, who served as director of the White House Office of Science and Technology Policy from 2001-09. "Those high-level outputs are being measured now, but to evaluate specific policies or programs we need intermediate measures that can be assessed in the short term to let us know if we're on the right track, and to get these right, we need better understanding of the whole innovation system.

"So first we need data, and conceptual frameworks, then we can choose measures that mean something and collect or refine data on those measures."

"STEM Enterprise: Measures for Innovation and Competitiveness" is designed to assess the effectiveness of all federal, state, private and academic money spent on R&D in the STEM -- science, technology, engineering and math -- enterprise. Work in this area serves as a driving force for economic and social advancement throughout the world.

The event will be at George Washington's Marvin Center on Wednesday from 9 a.m. to 5:30 p.m. On-site registration will be taken. For more on the program and additional speakers, see <http://www.ieeeusa.org/calendar/conferences/stem/>.

Marburger is a university professor in the departments of Physics and Electrical Engineering at Stony Brook (N.Y.) University, where he served as president from 1980-84. His tenure as the president's science advisor began soon after the 9/11 terrorist attacks and was the longest in history. Marburger helped to formulate major policy initiatives associated with the establishment of the Department of Homeland Security, re-orientation of the nation's space policy following the 2003 Space Shuttle Columbia disaster, the nation's re-entry in the international nuclear fusion program ITER, and the American Competitiveness Initiative that sought to double federal funding for the physical sciences and engineering.

Wednesday's event will also look at the link between STEM R&D and quality of life in the United States and abroad, a link Marburger says is poorly understood.

"There is pretty obviously a link because technology pervades everything we do, but exactly how is a very big question," he said. "As a scientist and an educator, I love it when Congress funds more research in universities --

any research. But as a policy adviser, I have to ask if we really understand what we're doing when we fund particular fields and programs at the particular levels that we do. In many cases we're just responding to, more or less, random advocacy."

Marburger thinks the U.S. STEM enterprise is so big -- the federal government alone has an R&D portfolio of \$147.3 billion in FY 2009 -- that no single organization can create unbiased reports and recommendations for policymakers.

"No one entity can provide the understanding needed for rational policymaking to enhance competitiveness. You need an entire profession doing this all the time," Marburger said. "It's not a disadvantage to have multiple sources of reports and recommendations, especially when our state of knowledge about cause and effect is so weak. An unbiased report today would be one that says we don't understand how all this works. There are certainly entities like the National Academies that produce good, relatively unbiased reports. But broad policy recommendations are nearly always highly subjective and intuitive.

"The best we can do in the current environment of ignorance is to assemble groups of experts and ask their opinion. I would like to see us spend more on providing better tools for those experts, and on training professionals who can improve on these intuitive judgments."

The IEEE Cincinnati Section Executive Committee **Member Names and Phone Numbers**

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